Mathieu Dutour Sikirić

http://mathieudutour.altervista.org
mathieu.dutour@gmail.com | +385 99 42 82 000

EDUCATION

ÉCOLE NORMALE SUPÉRIEURE
Master in Pure Mathematics
1997 | Paris, France, very honourable

UNIVERSITÉ PARIS 11 ORSAY
PhD in Pure Mathematics
1999 | Paris, France, very honourable

LINKS

Github:// **MathieuDutSik**
LinkedIn:// **MathieuDutour**
Quora:// **MathieuDutour**

TECHNICAL SKILLS

MATHEMATICAL

Optimization: Linear Programming, Semidefinite Programming, Integer Programming, Satisfiability, Enumeration
Statistics & Machine learning: Lasso, PCA, L1-methods
Geometry: Mesh, Polyhedral, Differential Geometry
Numerical technique: Finite difference, Finite element, Redistribution schemes

COMPUTERS

Platforms: Linux, on x86-64 and ARM v6.
Tools: Git, Svn, Gdb, Cross Compil.
Data formats: Grib, Netcdf, Protocol buffer, XML, SVG
Concurrency: MPI, TBB, OpenMP, Posix threads, Qt threads, C++11 threads

LANGUAGES

French: Excellent
English: Excellent
Croatia: Good knowledge

SKILLS

PROGRAMMING

10+ years of experience:
C++17 • Boost • C • Fortran 90
Matlab • GAP • PERL • LaTeX
Other experience:
Java • Python
Android• OpenCV

EXPERIENCE

INSTITUT RUDJER BOŠKOVIĆ Senior Associate Researcher
Jan 2007 - Now | Zagreb, Croatia

- Work on implementing operational wave model in National institute.
- Develop new coupling techniques, new meshes, apply to case studies, etc.
- Published 4 books in Springer, Cambridge University Press, World Scientific.
- Published 97 articles, 63 of them in journals with impact factor.
- Did 130+ referees.
- Work in Mathematics, Applied Mathematics, Computer Science, Crystallography, Chemistry, Oceanography and Meteorology.
- Invited researcher in Brown University, Institute of Statistical Mathematics in Tokyo, King Abdulaziz University, Rostock University, University of Cologne, Galway university, European Center for Medium Range Weather Forecasting, etc.

NAGOYA UNIVERSITY Tenure track professor in mathematics
2007 | Nagoya, Japan

PROFESSEUR AGRÉGÉ DE MATHEMATIQUES Teaching in classes préparatoires
1998-2002 | Orléans, France

- 32 out of 2138 candidates to the agrégation

ÉCOLE NORMALE SUPÉRIEURE Paid student in Mathematics
1994-1998 | Paris, France

- 25 out of 500+ candidates.

SOFTWARE DEVELOPMENT

- polyhedral and polyhedral_common (GAP, C, C++). The fastest program for computing dual description of symmetric high dimensional polytopes. Also useful for computing perfect forms, working with Delaunay polytopes and other works in copositive programming.
- Plot_OrientedMap (C++, SVG). A program for plotting spherical or toroidal maps.
- WaveWatch III and WAM (Fortran). Those are the models used at NOAA and ECMWF for forecasting sea surface waves.
- UNRUNOFF (Fortran, Python). A model used for solving the shallow water equation used in civil engineering.

SELECTED PUBLISHED PAPERS

- M. Dutour Sikirić, The seven dimensional perfect Delaunay polytopes and Delaunay simplices, Canadian Journal of Mathematics 69 (2017) 1143–1168
- M. Dutour Sikirić, K. Hulek, A. Schürmann, Smoothness and singularities of the perfect form compactification of A_g, Algebraic Geometry 2-5 (2015) 642-653
- M. Dutour Sikirić, K. Rybnikov, Delaunay polytopes derived from the Leech lattice, Journal de Théorie des Nombres de Bordeaux 26-1 (2014) 85–101
- M. Dutour Sikirić, A. Schürmann and F. Vallentin, A generalization of Voronoi's reduction theory and applications, Duke Mathematical journal 142 (2008) 127–164
- M. Dutour Sikirić, F. Vallentin and A. Schürmann, Classification of eight-dimensional perfect forms, Electronic Research Annoucements of the AMS 13 (2007) 21–32